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The Nebula near η Argûs.

The following is an Extract from a Letter addressed by R. J. Ellery, Esq., to Warren De La Rue, Esq., dated Melbourne, 1874, *January* 28:—

"We have commenced another drawing of *η Argûs.* It is again quite different from what it was six months ago; the great bay of the lemniscate is nearly filled up with dense nebula leaving a dark sigmoid inlet, which appears *inky* by contrast. Moderately dense nebula has formed from side to side of the opening where *η* is situated, embaying and apparently about to involve that star, so that *η* and the lemniscate are at present in a *lake* (!) completely surrounded by nebula."

On a Determination of Longitude by Chronometers, by the late Lieut. Hastings F. Murphy, R.E. By Robert J. Lecky, Esq.

I have much pleasure in presenting to the Society an original calculation of longitude by chronometer comparisons, made by the late Lieut. Hastings F. Murphy, R.E., astronomer to Colonel Chesney's Euphrates Expedition, who died of fever at Bussorah on the 6th of August 1836, immediately after the successful completion of his arduous duties, and of whom we have an interesting memoir in vol. x of the *Memoirs* and in vol. iv. of the *Monthly Notices*, written by the late Mr. Francis Baily.

Lieut. Murphy held an appointment in the Ordnance Map Office in the Tower; and early in the year 1832 I had a request from him to have correct time ready for him at the Observatory of the Royal Cork Institution, then under my care. He was on leave, and about to visit his father, Rector of Kiltallagh in the county of Kerry, and was bringing with him his own pocket chronometer and two others, which were carefully rated prior to leaving London, as well as while he was at Kiltallagh; and when passing through Cork, both on his outward and return journeys, had good comparisons with me; and on his return to town, sent me the accompanying calculations, which are valuable as a carefully worked-out example of such observations, as well as a memento of a most talented and amiable officer.

He also had a comparison with the late Dr. Dartnell, at Youghal, when passing through that town by coach, but this was only made on one journey, and I also fear that Dr. Dartnell was not sufficiently exact as to the error of his chronometer, or that Lieut. Murphy may not have taken it down correctly as our well ascertained local difference was $2^m\ 28^s$, while this shows it as $2^m\ 48^s$. Notwithstanding this error, I leave this calculation attached to that for Cork, and I accompany them with the one-inch scale Ordnance Maps of the places, which give the latitude and longitude with great accuracy. The cross lines in red on these maps show the position of both Observatories; that for

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Youghal shows longitude 7° 51′ 10″, or in time $31^{m}\ 24^{s}\cdot40$. Lieut. Murphy makes it $31^{m}\ 2^{s}\cdot79$; difference $21^{s}\cdot61$, which is a manifest error, and particularly so as the differences for each chronometer correspond very closely. The Cork map gives a longitude of 8° 28′ 12″, or in time $33^{m}\ 52^{s}\cdot48$; Lieut. Murphy's being $33^{m}\ 52^{s}\cdot74$; the difference being $0^{s}\cdot26$, which is much more likely to have been my error than his, and is, I fancy, a very close result, considering the small number of chronometers employed, and the rougher modes of conveyance in that day compared with those with which we are favoured in the present.

Box Chronometer. "French," No. 3179.

1832	Greenwich to Cork.		Cork to Greenwich.				
	m	s	m	s		m	s
Mean daily rate . .	− 0	0·55	+ 0	0·57			
Elapsed time . . .	0	3·729	0	4·587			
	− 0	2·051	+ 0	2·61			
Civil reckoning. Jan. 30. 15½ S. of G. .	− 0	27·6	− 0	46·5	March 18		
	− 0	29·651	+ 0	49·11			
Feb. 3. 9 F. of C. .	33	19·10	33	6·83	March 14		
	33	48·75	33	55·94	Mean	33	52·34
Pocket chronometer, 1894	33	58·50	33	44·73	Do.	33	51·62
Do. 156	33	59·27	33	48·55	Do.	33	53·91
	33	55·51	33	49·74	Do.	33	52·63

Or, mean of 1st chronometer, with mean of 2nd and 3rd . . 33 52·55

Mean of both journeys, giving value to each inversely as elapsed time, viz., G to C, −3·729 days, and C to G, 4·587 do. } 33 52·93

Mean longitude of Cork Observatory, given as nearest to the truth 33 52·74 W.

Longitude of Youghal.

	m s	m s	m s	
1st, No. 3179 =		2 48·88		
2nd, „ 1894 =	2 48·73	2 49·02	2 48·95	Youghal and Cork
3rd, „ 156 =	2 49·30		33 52·74	Cork and Greenwich
			31 3·79	
Dr. Dartnell's chronometer slow, which must be in error			−0 1·00	
			31 2·79	

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